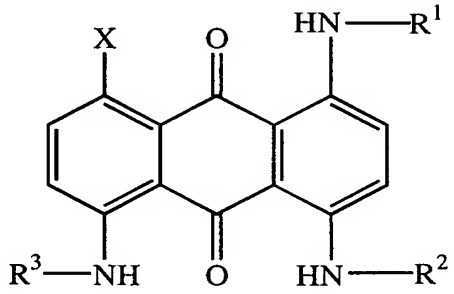
Claims

1. A method for marking a liquid petroleum hydrocarbon; said method comprising adding to said liquid petroleum hydrocarbon: (i) at least one anthraquinone dye having an absorption maximum in the range from 710 nm to 850 nm selected from the group consisting of 1,4,5,8-tetrasubstituted anthraquinones and anthraquinone dimers; and (ii) at least one visible dye having an absorption maximum in the range from 500 nm to 700 nm.

2. The method of claim 1 in which the liquid petroleum hydrocarbon is selected from the group consisting of lubricating oil, hydraulic fluid, brake fluid, gasoline, diesel fuel, kerosene, jet fuel and heating oil.

3. The method of claim 2 in which said at least one anthraquinone dye having an absorption maximum in the range from 710 nm to 850 nm has formula (I)

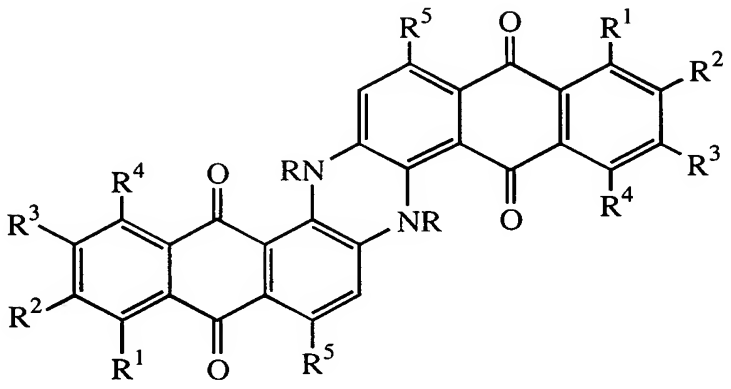


(I)

wherein X is R^4NH, NH_2, OH or halo; and R^1, R^2, R^3 and R^4 independently are alkyl, aryl, aralkyl, heteroalkyl or heterocyclic.

4. The method of claim 3 in which X is R^4NH, and at least three of R^1, R^2, R^3 and R^4 are aryl or aromatic heterocyclic.

5. The method of claim 2 in which said at least one anthraquinone dye having an absorption maximum in the range from 710 nm to 850 nm has formula (II)



(II)

wherein R^1, R^2, R^3, and R^4 independently are hydrogen, alkyl, heteroalkyl or alkylamino; R^5 is hydrogen, alkyl, heteroalkyl, alkylamino, arylamino or aromatic-heterocyclic-amino; and R is hydrogen, alkyl, arylamino or aromatic-heterocyclic-amino; provided that at least one of R and R^5 is arylamino or aromatic-heterocyclic-amino.

6. The method of claim 2 in which said at least one visible dye having an absorption maximum in the range from 500 nm to 700 nm is selected from the group consisting of anthraquinone dyes and diazo dyes.

7. The method of claim 6 in which said at least one visible dye has an absorption maximum in the range from 550 nm to 700 nm.

8. The method of claim 1 in which said at least one anthraquinone dye having an absorption maximum in the range from 710 nm to 850 nm, and said at least one visible dye having an absorption maximum in the range from 500 nm to 700 nm are detected without performing any chemical manipulation of the liquid petroleum hydrocarbon.

9. The method of claim 8 in which said at least one anthraquinone dye having an absorption maximum in the range from 710 nm to 850 nm is present in an amount from 0.02 ppm to 1 ppm and said at least one visible dye having an absorption maximum in the range from 500 nm to 700 nm is present in an amount from 0.2 ppm to 2 ppm.

10. The method of claim 9 in which said at least one anthraquinone dye has an absorption maximum in the range from 720 nm to 810 nm.